

numbers, usually keep as close together as Blackbirds*, and move as if actuated by a common impulse. Their dispersion, as usual, is marked, if not complete, during the breeding-season; but the flocks reassemble as soon as the yearlings are well on wing; and from this time, until the following spring, one may more often see a hundred, or several hundreds, together than fall in with single birds. As we have elsewhere stated, we have witnessed a gathering of probably a thousand individuals, a sight that recalled Dr. Latham's statement respecting flocks of twenty thousand *Cyanura cristata*, with the thought that he would have come at any rate *nearer* the truth, and been less deserving of Wilson's sarcasm, could he have set down such figures against *Gymnokitta cyanocephala*.

XX.—*Notes on the Resident and Migratory Birds of Madeira and the Canaries.* By F. DU CANE GODMAN, F.Z.S. &c.

A VISIT to Madeira or the Canaries in early spring is, I think, one of the most enjoyable things one can imagine. Leaving behind the cold disagreeable weather we usually experience at that time of the year in England, in rather more than a week one finds one's self in a warm and genial climate, surrounded by most lovely scenery and a semitropical vegetation, which much more than compensate for the discomfort of the voyage.

In March last year I paid a visit to these islands, and gave special attention to their ornithology, making a collection of all the birds I could procure; and in the following paper I propose to relate the results of my observations during the excursion, together with all the information I can glean from other sources, so as to make it as complete as possible; and I trust it may not be without interest to the readers of 'The Ibis.'

These two groups of islands present no new field to the naturalist; and there are few of our countrymen, at all events, who are not acquainted with the various works of Mr. Wollaston founded on his indefatigable labours and interesting discoveries, the result of which has been to bring to light so many hitherto unknown and remarkable forms, especially amongst the Coleoptera. MM. Webb and Berthelot, too,

* [*Molothrus*.—ED.]

have published a most comprehensive work on the botany and zoology of the Canaries, including in the latter the ornithology; but probably the best authority on this last-named subject is Dr. Bolle, who has written several papers in the 'Journal für Ornithologie'*. Mr. Vernon Harcourt has given very complete lists of the birds of Madeira in the 'Proceedings of the Zoological Society,' and the 'Annals and Magazine of Natural History'†. Lastly, I must not omit to mention a short paper written by Prof. Newton in this Journal, and entitled "Two Days in Madeira"‡. As might be supposed, from so hurried a visit, the latter article contains rather suggestions for future ornithologists to work out than new information respecting the birds inhabiting the island. I have freely made use of the works of all these authors, and, in most cases where I have done so, have mentioned whence my information has been derived; the remainder is from what came under my own notice.

Unfortunately, in consequence of the prevalence of smallpox in Europe last year, I experienced considerable annoyance and delay through the stringent quarantine regulations enforced by the Spanish and Portuguese Governments, rendering communication between the several islands very difficult. Indeed, through the loss of time thus entailed, I found it quite impossible to visit as many of them as I had intended; and instead of spending four months between the two groups, I was obliged to be content with two, as, in leaving the Canaries for Madeira, I was compelled to go through Spain, and take the steamer again from Lisbon, all direct intercourse between the islands being prohibited. My time being thus sadly curtailed, I thought it better to pass the greater part of what remained in Teneriffe, the most important of the Canaries, making a short trip to Palma and Gran Canary, and thence afterwards going to Madeira, as I have already said, *viâ* Cadiz and Lisbon. Under ordinary circumstances these islands are very accessible from

* J. für Orn. 1854, pp. 447-462; 1855, pp. 171-181; 1857, pp. 258-292; 1858, pp. 225-228; 1862, pp. 357-360.

† P. Z. S., 1851, pp. 141-146; Ann. & Mag. N. H. 2nd ser. vol. xii. pp. 58-63 (1853); vol. xv. pp. 430-438 (1855).

‡ Ibis, 1863, pp. 185-195.

England, as there are constantly steamers from Liverpool to the African coast, most of which call at either Madeira, Teneriffe, or Gran Canary, and there are also the regular Portuguese and Spanish mail-steamers. To a naturalist these isolated spots have an interest not possessed to the same extent by continents, inasmuch as they are more capable of throwing light on the important question of geographical distribution.

All the Atlantic islands are volcanic, and consequently mountainous ; and in some the traces of recent volcanic eruptions fall within the historic period. In others there are large tracts of land covered with cinders and scorix almost destitute of vegetable life, whilst, again, in others, where the eruptions are of older date and the lavas more disintegrated, vegetation is exceedingly luxuriant. To the stranger, perhaps, one of the most striking features is, that there is scarcely a flat piece of ground throughout, but the whole surface is broken up into innumerable abrupt mountains and hills varying in height from the Peak of Teneriffe, which attains an altitude above the sea-level of more than 12,000 feet, down to small conical hills of ashes not exceeding 100 feet in height.

The climate of the Canaries near the coast, and more especially of the eastern islands, is very dry, and during a great part of the year little or no rain falls in the vicinity of the sea ; while, in consequence of the continual north-east trade winds to which all the islands are subject for a great portion of the year, a dense belt of mist forms and rests upon the mountains at a height of about 3000 feet above the sea. This remains throughout the whole day, and casts a gloom upon the mountain scenery ; but usually during the night this cloud clears away, and at sunrise the highest peaks are frequently visible. Soon after sunrise, however, the clouds form again, and the same state of things succeeds. This cloud is some 3000 to 4000 feet in thickness, or extends to a height of 7000 feet above the sea, and from the lower portions of Teneriffe (and also of the other islands) obscures all view of the highest peaks of the mountaintops. Above 7000 feet a wind constantly blows from the south-west, overlaying the north-east trades—a wind nearly destitute of moisture. Thus it frequently happens that the

Peak of Teneriffe is visible at a distance out at sea though obscured to those on the island. The same phenomenon takes place in the other islands where the mountains are high. During the months of July, August, and September, and also occasionally during winter, no clouds appear on the mountains.

The botanical features of the islands are hardly what might have been expected from their southerly position. A large portion of the plants are either European or closely allied to European species; but there are others, such as the euphorbias and laurels, widely differing from any thing now existing on the neighbouring continent. The vegetation, especially of the Canaries, may be divided into zones. Beginning from the sea-shore, we get the remarkable *Euphorbia canariensis* (which, as its name implies, is peculiar to this group), together with other species of the same genus. A considerable portion of the land has now been cleared and brought under cultivation, and produces cochineal, the chief export product of the islands. At the height of about 3000 feet, or where the clouds caused by the trade winds commence, the laurel forest begins, and extends upwards for some 3500 feet; in this cloudy zone everything is saturated with moisture, fostering the fine laurel forest and grand ferns that abound there. Much of the forest has now been destroyed by the improvident inhabitants for fuel and other purposes; but the stumps of the old trees still indicate its former extent. In some few places, where the cutting of trees has been prohibited, one can form some idea, from the grandeur and size of the til and laurel trees, of the character these forests once possessed. Such are the forests of Tacaronte and Taganana in Teneriffe. Above the laurels, or at about 6000 feet above the sea, comes a belt of tree heath (*Erica arborea*). This again is succeeded by a forest of pine trees (*Pinus canariensis*), which towards its upper margin become stunted. Finally, at about 9000 feet there remains nothing but retama (*Cytisus nubigenus*), which also is peculiar to these islands. Beyond the retama vegetation ceases, and nothing but ashes and lava rocks remain, there being no trace, as on European mountain-tops, of any thing like an alpine flora.

These islands are much frequented by Petrels and other

oceanic wanderers; and there are three places especially where they breed—namely, the Desertas, some rocky uninhabited islands about thirty miles to the eastward of Funchal, the Salvages, situated nearly midway between Madeira and Gran Canary, and the small island of Allegranza to the northward of Lanzarote. Being in Madeira in the breeding-season, I determined on making an expedition to the Desertas, and for this purpose chartered a large half-decked fishing-boat with the requisite crew, and laid in a supply of provisions sufficient to have lasted for a week. It was a beautiful morning when I started, and the weather appeared settled, and I had congratulated myself on the prospect of making a good collection of birds and eggs. In about five hours we reached Chão; but the breeze had freshened considerably, and the sailors intimated that there would be some difficulty in landing, as there is no beach on which to run the boat, and a heavy surf was beating upon the rocks. They managed, however, to bring the boat round into a small bay which was partly sheltered from the wind; and having let go an anchor from the stern to prevent our drifting upon the rocks, two of the men jumped into the water and swam ashore, each with the end of a rope in his hand, which, as soon as they landed, they made fast to the rocks, thus securing the boat from three different points. They then hauled the boat in close to the rocks, and we scrambled ashore and set to work at once searching for birds and eggs. There were only a few pairs of Gulls and Terns flying about, and nothing like the number of sea-birds I had been led to expect. We found plenty of Bulwer's Petrels sitting on their eggs, which were in holes or under rocks, and usually about as far in as one could reach with one's arm. They build no nest, but lay their eggs on the bare rock. I did not find more than one egg in each nest. I secured several birds and eggs, and kept some of the former alive. It is curious to watch them crawling along the ground; for they cannot fly unless they get to the edge of a rock; they waddle along on their feet, and, when they come to a steep place, use the sharp-pointed hook of their beaks to draw themselves up with. They seem to dislike the light, and hide themselves under a rock or crawl into a hole as soon

as possible ; I never saw one of this species flying about in the daytime, though some of the smaller ones are common enough. With some difficulty I afterwards scrambled up to the top of the cliff, which is some height above the sea and, being volcanic, crumbled away under one's foot and made the hold insecure. On reaching the top I found it to be nearly flat and covered with cinders ; a few weeds were the only plants. Here there were numbers of Titlarks (*Anthus bertheloti*), and I shot several specimens. I had only seen two in Madeira. There were also flocks of Canaries and Linnets. Having spent about four hours on the island, we got into the boat again, intending to go on to Deserta Grande, which, as its name implies, is the largest of the islands, and is said to be a more favourite breeding-place for Petrels. As soon, however, as we got outside of our sheltered bay we found the sea had risen considerably ; and a stiff breeze was blowing, causing such a heavy surf that the sailors said we could not safely go near the island. However, I made them try, and we went as near shore as we dared ; but we found it quite impossible to land ; so, having got all I could from Chão, we started back again for Madeira. On clearing the point of the island the wind was dead against us, and we were obliged to tack, in doing which, on two occasions, we shipped so much water that nearly all my birds and eggs were washed overboard and the boat almost swamped. It took us about fourteen hours to return to Madeira ; and we were glad enough to land at St. Cruz at 2 o'clock next morning, thoroughly drenched, and with our boat half full of water. I would advise future travellers who may undertake the same expedition not to go in a smaller vessel than a good schooner. There would not be much difficulty in hiring one at Madeira, as there are several which sail to Porto Santo and other islands. The fishing-boats are not of a build to stand rough weather ; and sometimes, as on this occasion, the wind springs up very suddenly.

I was told that a few years ago that an Englishman had landed on Deserta Grande to shoot sea-birds, and that while he was ashore it came on to blow so hard that the boat was obliged to return for safety to Madeira without him, and it was three

days before he could be rescued, as it is impossible to land in heavy weather.

A party of sailors go annually to the Salvages for the fishing, and spend some months camped out on these islands. I was told that they also collect and salt large quantities of the sea-birds which resort there to breed, and bring them home preserved in barrels. They were there when I was in Madeira; so I could not gain any information from them about the birds of those islands.

I left Madeira for England a few days after my trip to the Desertas, so had not another opportunity of revisiting them.

I collected a considerable number of birds' skins in Madeira and the Canaries, in the latter group principally from the island of Teneriffe. These, since my return home, I have carefully compared with European examples of the same or most nearly allied species, and also with my Azorean specimens.

In the following list I have marked those birds I observed myself with a dagger (†); in other cases I have given the authority for their admission. It will be seen that there are several species I did not meet with. This is to be accounted for by my comparatively short stay, and also by the fact of my being able to visit only some of the islands.

1. †*NEOPHRON PERCNOPTERUS* (Linn.).

Neophron percnopterus, W. & B. Orn. Can. p. 5; Bolle, J. für Orn. 1854, p. 448, and 1857, p. 268.

Cathartes percnopterus, Vern. Harc. Ann. & Mag. Nat. Hist. 2nd ser. 1855, xv. p. 437.

Common in all the Canarian group, where some few pairs may usually be seen flying over the towns or large villages at a considerable height. I once saw fourteen together near Laguna, in Teneriffe, feeding on the carcass of a dead animal; they were so gorged that they took but little notice of me, and allowed me to approach quite close before they flew off. They breed in the rocks in the mountains of Teneriffe, and most probably also in the other islands of the Canarian group. I have a fine coloured egg taken from a nest in a ravine near Chasna in the highland of Teneriffe; it was brought me by a country-

man, and was quite fresh. He told me that he saw the old bird fly from the nest, which he said was quite low down the cliff and easy of access.

Vernon Harcourt mentions this Vulture as occurring occasionally in Madeira. I never heard of it in the Azores, nor do I believe it ever occurs there.

2. *FALCO PEREGRINUS*, Linn.

Falco peregrinus, W. & B. Orn. Can. p. 5; Bolle, J. für Orn. 1854, p. 449, and 1857, p. 270.

I never met with this bird, though both Berthelot and Bolle say it is found in some of the Canaries; Vernon Harcourt does not mention it in his list of the resident birds of Madeira.

3. *FALCO SUBBUTEO*, Linn.

Falco subbuteo, W. & B. Orn. Can. p. 6; Bolle, J. für Orn. 1854, p. 449; Vern. Harc. Ann. & Mag. Nat. Hist. 2nd ser. 1855, xv. p. 437.

Bolle omits this species in his second paper on the Canary-Island birds, though in his first he says the Hobby is not unfrequently met with in the eastern islands, where its favourite food is the Skylark (*Alauda arvensis*). I never saw it myself. MM. Webb and Berthelot say that it is to be found throughout the archipelago. In Madeira it is a straggler.

4. *TINNUNCULUS ALAUDARIUS* (Gm.).

Falco tinnunculus, L.; W. & B. Orn. Can. p. 6; Bolle, J. für Orn. 1854, p. 449, and 1857, p. 272; Vern. Harc. Ann. & Mag. Nat. Hist. 2nd ser. 1855, xv. p. 437.

The Kestrel is exceedingly common in both Madeira and the Canaries, where it feeds principally upon lizards, which are very numerous. I secured a good series of specimens of both sexes and various ages. The mature females assume a grey tail at the end of the first year, but, unlike the males, this is always crossed with narrow bars. The male appears to get the grey tail at the same age. The plumage of the young birds is remarkably dark. It breeds in holes in the cliffs; and I have seen as many as twelve or fifteen pairs that had nested in the same ravine, where they appear not to interfere with each other.

The characters I have briefly drawn attention to above

distinguish the Kestrel of Madeira and the Canaries from ordinary European specimens. Similar peculiarities appear in the Kestrels found in Japan, Nepal, and Abyssinia, when compared with European examples; but I am unable to detect any really tangible points of difference between specimens from these widely separated localities. A larger series of skins may throw more light upon this matter; but present want of materials compels me to leave it *sub judice*. It is not improbable that the bird from West Africa, described by Swainson (Birds of W. Afr. i. p. 109) as *Falco rufescens*, may prove to be identical with the Kestrel from these islands; so that, if it be sufficiently distinct from the European bird, Swainson's name can be used for it.

5. †*MILVUS ICTINUS*, Sav.

Falco milvus, Linn.; W. & B. Can. Orn. p. 7; Bolle, J. für Orn. 1854, p. 449.

Milvus regalis, Bolle, J. für Orn. p. 270.

One of the most common of the Raptores in Teneriffe and other islands of the group, where it is stationary. It may be seen flying over any of the large villages, and is always on the look-out for poultry, amongst which it has the reputation of being very destructive, whence it is the universal enemy. Notwithstanding this, I failed to procure a specimen for my collection, though it is to be seen everywhere.

6. †*HALIAËTUS ALBICILLA* (Linn.).

Falco albicilla, Lath.; W. & B. Orn. Can. p. 6; Bolle, J. für Orn. 1854, p. 449.

Webb and Berthelot do not seem to have observed this Eagle, though Dr. Bolle says that he met with it in the island of Lobos in May 1864 in some numbers. He also mentions it as a coast species in Teneriffe. In the month of April I frequently watched a pair of these birds three or four miles to the eastward of Orotava, near the coast. They frequented a high, inaccessible cliff over the sea, where I suspect they had a nest, though it was impossible to ascertain the fact. The birds were very wary, and I could not get close to them; yet, as I had several opportunities of observing them with my glasses, I have

no doubt about the species. I never met with it elsewhere amongst the islands; and it is not recorded from Madeira.

7. †*BUTEO VULGARIS*, Lacép.

Falco buteo, Linn.; W. & B. Orn. Can. p. 8; Bolle, J. für Orn. 1854, p. 449; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

Buteo vulgaris, Ray; Bolle, J. für Orn. 1857, p. 270.

The most common of all the larger birds of prey in the Azores, Madeira, and the Canaries. I, unfortunately, did not procure specimens from the last two groups of islands, where it chiefly frequents the more wooded parts. The Azorean birds I have are very light-coloured, and resemble more the southern form of this Buzzard (*Buteo desertorum*). From a distance the birds I saw in Madeira and the Canaries did not appear to me to belong to this race, being as dark as common European specimens; but as I did not get examples, I cannot determine this point with certainty.

8. †*ACCIPITER NISUS* (Linn.).

Falco nisus, Linn.; W. & B. Orn. Can. p. 7; Bolle, J. für Orn. 1854, p. 449; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

I believe this species is found sparingly throughout all the Canaries. The only specimen I obtained was that of a very old male in fine plumage, which I shot near Orotava in the month of April. I saw it also occasionally in other parts. Bolle says it is numerous in Teneriffe and Gran Canary, and that it does not migrate.

9. *CIRCUS CINERACEUS* (Mont.).

Falco cineraceus, W. & B. Orn. Can. p. 8; Bolle, J. für Orn. 1854, p. 450.

Inserted on the above authorities. I did not observe it.

10. †*ASIO OTUS* (Linn.).

Strix otus, W. & B. Orn. Can. p. 9; Bolle, J. für Orn. 1854, p. 450, and 1857, p. 274.

Dispersed through the Atlantic islands, but nowhere abundant. It frequents chiefly the deep shaded ravines, and is

consequently seldom seen. I procured a very young specimen in Fayal, one of the Azores, and I also saw an adult bird that had been killed in the forest of Taganana in Teneriffe. It is also occasionally found in Madeira, where it probably breeds. I saw a stuffed bird of this species at Funchal. It had been killed in the island.

11. †*STRIX FLAMMEA*, Linn.

Strix flammea, W. & B. Orn. Can. p. 8; Bolle, J. für Orn. 1854, p. 450, and 1857, p. 274; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

Like the preceding species, the Barn-Owl is thinly scattered throughout the three Atlantic groups of islands. Examples I have seen from the Azores and Canaries are rather darker-coloured than continental specimens, but in other respects they do not differ.

12. †*PICUS MAJOR*, Linn.

Picus major, W. & B. Orn. Can. p. 26; Bolle, J. für Orn. 1854, p. 462.

Picus numidicus?, Bolle, J. für Orn. 1857, p. 320.

This Woodpecker is tolerably common amongst the pine forests of Teneriffe in the high mountains. I also saw several in the retama bushes in the Cañadas. Bolle says that *P. numidicus* is probably the Canarian species, and not *P. major*. I procured a few specimens from near Chasna (the locality where he mentions having seen it) which undoubtedly are identical with the northern race. It also inhabits Gran Canary and Palma, and possibly some of the other islands of the group. This widely distributed species is not mentioned by Vernon Harcourt as occurring in Madeira; and if Mr. Brewer was not mistaken, *P. minor* is the only Woodpecker found in the Azores; but I think it more than possible he may have mistaken the lesser for the greater species.

P. numidicus, to which species Dr. Bolle seems inclined to refer the Canarian bird, has a conspicuous red pectoral band, rendering it easily distinguishable from *P. major*. There can be no doubt that the Woodpecker I am now mentioning belongs to the latter species, though the contrary might be surmised from

the geographical position of the islands. Both are well figured in Sharpe and Dresser's 'Birds of Europe,' though they do not give positive information as to which species is found in the Canaries.

13. †*ALCEDO ISPIDA*, Linn.

Alcedo ispida, W. & B. Orn. Can. p. 25; Bolle, J. für Orn. 1854, p. 461, & 1857, p. 319; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

I am not sure that this bird has any real right to be included amongst the resident species of the Canaries, though it is frequently met with about the coasts of the eastern islands. I do not believe it breeds there. I saw it once or twice near the port of Orotava, in Teneriffe, in the middle of April. It is given by Vernon Harcourt in his list of occasional visitors in Madeira.

14. †*UPUPA EPOPS*, Linn.

Upupa epops, W. & B. Orn. Can. p. 26; Bolle, J. für Orn. 1854, p. 461, & 1857, p. 319; Vern. Harc., Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

Inhabits all the islands of the Canarian archipelago, where it breeds. It is said to be migratory, arriving early in spring and taking its departure again in autumn. It is very tame, and may frequently be seen about Laguna, in Teneriffe, perched upon a wall at the side of the road, erecting and lowering its crest as any one passes, without showing any signs of alarm. Vernon Harcourt mentions its casual occurrence in Madeira, on the authority of Mr. Lowe; and I saw a single example which had been killed in Terceira, one of the Azores, some time previously. Bolle says that, though the greater number migrate, a few individuals remain in the Canaries throughout the winter.

15. *CAPRIMULGUS RUFICOLLIS*, Temm.

Caprimulgus ruficollis, W. & B. Orn. Can. p. 24; Bolle, J. für Orn. 1854, p. 461, & 1857, p. 323.

Mentioned by Webb and Berthelot as of accidental occurrence, though Bolle seems to consider it a regular summer visitant. The latter observer says it breeds in Lanzarote and Fuerteventura, and therefore ought to be included amongst the recognized birds of the Canaries. It is probable it does not extend to the western islands. I did not see it myself. Vernon Harcourt, on the

authority of Mr. Hinton, gives *C. europæus* as an occasional straggler in Madeira.

16. †*CYPSELUS PALLIDUS*, Shelley.

Cypselus apus, Linn. W. & B. Orn. Can. p. 23; Bolle, J. für Orn. 1854, p. 460, & 1857, p. 322.

Cypselus murarius, Temm. Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

The distinction between this species and *C. apus* was first pointed out by Capt. Shelley, and described in 'The Ibis' (1870, p. 445). He says it is extremely abundant in Egypt, and arrives in February, and that he never saw the common Swift, though he kept a sharp look-out for it. My specimens from Madeira and the Canaries agree with his Egyptian types. It is easily distinguished on the wing, by its much lighter colour and whiter throat. It is rather remarkable that in Madeira both this and the next species are said to be stationary throughout the year, while in the Canaries they leave in autumn and return in March. *C. pallidus* appears usually a few days before *C. unicolor*. It breeds, both in the Canaries and Madeira, in cliffs.

17. †*CYPSELUS UNICOLOR*, Jardine.

Cypselus unicolor, W. & B. Orn. Can. p. 24; Bolle, J. für Orn. 1854, p. 460, & 1857, p. 322; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

This appears equally common with the last-named species, both in Madeira and the Canaries, where it frequents chiefly the high land, while its congener is most abundant near the sea, whence the latter has received the name of "Andorhina do mar," while the former is called "Andorhina da serra." I saw several about the Cañadas, skimming over the retama bushes, which were then in full bloom and attracted numerous insects. It builds in holes in the cliffs, where it nests in societies. I also found a small colony nesting in a cliff on the north side of Madeira, not far from the sea.

18. †*HIRUNDO RUSTICA*, Linn.

Hirundo rustica, W. & B. Orn. Can. p. 23; Bolle, J. für Orn. 1854, p. 460, & 1857, p. 322; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

I found the Swallow breeding abundantly in Madeira and Canaries, though both Webb and Berthelot, and Bolle, say it only occurs on passage in the Canaries. Vernon Harcourt records it amongst his list of stragglers in Madeira; but, the year I was there, there were numbers about St. Anna, on the north side, in June. I cannot say whether it is stationary in Madeira and has been overlooked; but in Teneriffe I was told it arrived soon after the Swift; these latter birds, however, are not migratory in Madeira.

19. †HIRUNDO URBICA, Linn.

Hirundo urbica, Bolle, J. für Orn. 1854, p. 460; Vern. Harc. Ann. & Mag. Nat Hist. ser. 2, 1855, xv. p. 437.

This species is not recorded as a resident by other observers, and perhaps is only accidental; but as I saw a pair that had a nest at St. Anna in Madeira, I include it. I did not meet with it in the Canaries or elsewhere. Bolle says he saw swarms of them at Oliva, in Fuerteventura, in April 1852. He remarks that they disappeared as quickly as they came.

20. MUSCICAPA ATRICAPILLA, Linn.

Muscicapa atricapilla, W. & B. Orn. Can. p. 11; Bolle, J. für Orn. 1854, p. 452.

This bird is admitted into the Canarian list on the authority of Webb and Berthelot, who give as its habitat the island of Teneriffe, where, however, I never met with it.

21. LANIUS —, sp.?

Lanius excubitor, Linn.; W. & B. Orn. Can. p. 10.; Bolle, J. für Orn. 1854, p. 452.

Lanius meridionalis; Bolle, J. für Orn. 1857, p. 274.

A Shrike is not unfrequent near the shore in the Canaries; Bolle says it builds in the *Euphorbia canariensis*, and that the inhabitants encourage it, as it feeds upon the Gekko, an object of fear amongst the natives, who believe it to be poisonous. I did not procure specimens, so cannot say whether Bolle is right in his second paper in ascribing it to *L. meridionalis* instead of *L. excubitor*. Sharpe and Dresser (Birds of Europe) think the species will prove to be *L. algeriensis*.

22. †*TURDUS MERULA*, Linn.

Turdus merula, W. & B. Orn. Can. p. 12; Bolle, J. für Orn. 1854, p. 453, & 1857, p. 278; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

Found in the Canaries, Madeira, and the Azores, where it is very common in all damp places. Bolle says it is not found in Lanzarote, nor in Fuerteventura. In Gran Canary and Teneriffe it is seldom seen near the coast; but in the tree-heath- and laurel-district it is exceedingly abundant.

23. *PARUS MAJOR*, Linn.

Parus major, W. & B. Orn. Can. p. 17; Bolle, J. für Orn. 1854, p. 455, & 1857, p. 284.

Seems to be found in the pine-forests of Teneriffe and Palma; it however escaped my observation, and I fancy it cannot be common.

24. *PARUS TENERIFFÆ*, Less.

Parus teneriffæ, Sharpe & Dresser, Birds Eur.

Parus ultramarinus, Bonap.

Parus violaceus, Bolle, J. für Orn. 1854, p. 455.

Parus cæruleus, Linn.; W. & B. Orn. Can. p. 18; Bolle, J. für Orn. 1857, p. 284.

This beautiful little Titmouse is common throughout the Canaries, and is found from the sea-level up to a height of from 5000 to 6000 feet. Its habits much resemble those of its ally *P. cæruleus*. It nests either in a hole in a wall, or in a rotten tree. A pair of these birds had a nest in the wall of a banana-garden just beneath my window in Orotava. The young birds were already hatched when I arrived there on the 6th of April. I procured several specimens in Teneriffe, which are identical with Algerian examples.

Sharpe and Dresser, in their article on this species, in their 'History of the Birds of Europe' mention that there is "one difference which is noticeable" between Algerian and Canarian skins. "The island birds have an almost entire absence of the white tips to the greater wing-coverts and secondaries." On looking over all my series, I do not find this character constant to the birds of either locality. Mr. Dresser has since shown me

an Algerian bird in which these markings are quite as faint as in any of my Canarian specimens ; so the birds must be considered to belong to the same species.

25. *TROGLODYTES PARVULUS*, Koch.

Troglodytes europæus, Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

Sylvia troglodytes, Bolle, J. für Orn. 1854, p. 454.

Webb and Berthelot doubt the occurrence of the Wren in the Canaries ; Bolle, however, says that it is found there ; I never saw it.

26. †*REGULUS MADERENSIS*, Vern. Harc.

Regulus — ? Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, vol. xii. p. 58 (1853).

Regulus maderensis, Vern. Harc. P. Z. S. 1854, p. 153 ; Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 432.

This pretty little Goldcrest is not uncommon in the higher parts of Madeira, where it frequents chiefly the tree heath (*Erica arborea*) and the arbutus (*Clethra arborea*), and, like our Golden-crest, feeds upon insects it picks from the leaves. It is not easy to procure specimens, as the brush-wood is so thick, and when shot at from a close distance a bird is blown to pieces and spoiled for preserving. I also found it in a fir-wood a little above St. Anna, on the north side of the island. This was the only place I met with it low down.

27. †*REGULUS CRISTATUS*, Linn.

Regulus — ?, Bolle, J. für Orn. 1854, p. 455.

"*Regulus maderensis*, Vern. Harc. ;" Bolle, J. für Orn. 1857, p. 284.

Bolle mentions a Canarian species of *Regulus*. He says that he did not obtain specimens. I found it in Taganana, and in the highlands of Teneriffe, in the laurel-forests and also amongst the tree heath. My examples cannot be distinguished from the European Golden-crest. In Madeira it is represented by the preceding species, while in the Azores, again, we find *R. cristatus*, but always having the legs and beak rather larger than British or Continental specimens.

28. PHYLLOPNEUSTE RUFÆ (Lath.).

Sylvia rufa, Bonap. ; Bolle, J. für Orn. 1857, p. 284.

Common in Teneriffe, Palma, and Gran Canary, where it chiefly inhabits the upper and heathy districts, though I shot some specimens in a garden at Orotava. They are identical with our Chiff-chaff. I have six or seven skins from Teneriffe.

29. PYROPTHALMA MELANOCEPHALA (Gm.).

Sylvia melanocephala, W. & B. Orn. Can. p. 14 ; Bolle, J. für Orn. 1854, p. 454, & 1857, p. 282.

Webb and Berthelot found this species in Teneriffe ; and I met with it in a garden in Palma and in Gran Canary.

30. SYLVIA CINEREA, Bp.

Sylvia cinerea, W. & B. Orn. Can. p. 14 ; Bolle, J. für Orn. 1854, p. 454.

Found, according to Webb and Berthelot, and Dr. Bolle, throughout the Canarian archipelago where there are thorn-bushes. I failed to procure specimens of either this or the two following species.

31. †SYLVIA ATRICAPILLA, Linn.

Sylvia atricapilla, W. & B. Orn. Can. p. 14 ; Bolle, J. für Orn. 1854, p. 453, & 1857, p. 280 ; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437 ; Jard. & Selby, Illus. of Orn. t. 94 ; Heineken, Zool. Journ. v. p. 75.

This bird is very common in the Canaries, Madeira, and the Azores, and is much prized by the inhabitants for its singing-qualities. It is caught in considerable numbers and kept in cages, and is easily domesticated. In both Madeira and the Azores a variety is not unfrequently found, having the black on the head extending as far as the shoulders and round under the throat. This dark variety was described by Jardine and Selby as a species, in 'Illustrations of Ornithology,' under the name of *Curruca heinekeni*. I have seen some eight or nine examples in cages ; and one of them had the black of the throat extending as far as the breast, where it was gradually shaded off beneath into a slaty grey. The back also of this individual was darker than that of an ordinary Black-cap. I never saw this variety wild. A few caged specimens are usually to be seen in some of

the stores of Funchal, in Madeira. I could not ascertain that this singular variety occurs in the Canaries. They are said to interbreed with the common Black-cap. It is only in the male birds that this dark plumage occurs.

32. †*SYLVIA CONSPICILLATA*, Marm.

Sylvia conspicillata, Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

This beautiful little Warbler seems to have escaped the notice of other ornithologists who have visited the Canaries; it is not, however, unfrequently to be seen in the neighbourhood of Orotava, where it frequents thick bushes, and into which it plunges at the approach of danger. I saw it also near the Paul da Serra, in Madeira. Vernon Harcourt includes it in his list from this latter island.

33. *SYLVIA SUBALPINA*, Bonelli.

Sylvia passerina, Temm.; W. & B. Orn. Can. p. 15; Bolle, J. für Orn. 1854, p. 454, & 1857, p. 282.

A native of Teneriffe, where Berthelot found it nesting.

34. *CALAMODYTA AQUATICA* (Lath.).

Sylvia aquatica, Lath.; W. & B. Orn. Can. p. 13; Bolle, J. für Orn. 1854, p. 453.

Said by Webb and Berthelot to inhabit Gran Canary, where, however, it cannot be common, as there are few places in the island adapted to its habits. I did not see it during my short visit there.

35. †*ERITHACUS RUBECULA* (Linn.).

Sylvia rubecula, W. & B. Orn. Can. p. 16; Bolle, J. für Orn. 1854, p. 454. Vern. Harc. Ann. & Mag. N. H. ser. 2, 1855, xv. p. 437.

Erythacus rubecula, Bolle, J. für Orn. 1857, p. 283.

The Robin is met with in the Canaries, Madeira, and the eastern Azores. It is rather remarkable that birds from the last-named islands agree with the South-European race, which is paler in colour than British or North-European specimens, whilst those from Madeira and the Canaries are identical with the darker northern form. Like the Blackbird, this species is

seldom found near the coast in Teneriffe and Gran Canary ; but at an elevation of from 2000 to 8000 feet above the sea it is very common.

36. *RUTICILLA PHÆNICURA* (Linn.).

Ruticilla phænicura, W. & B. Orn. Can. p. 15 ; Bolle J. für Orn. 1854, p. 454, and 1857, p. 283.

Also said by Berthelot to inhabit Teneriffe, where it builds in the walls.

37. *PRATINCOLA RUBICOLA* (Linn.).

Pratincola rubicola, W. & B. Orn. Can. p. 13.

Saxicola rubicola, Bolle, J. für Orn. 1854, p. 453, and 1857, p. 279.

Webb and Berthelot met with this bird at Mercedes, in Teneriffe, where, however, they say it is rare. I did not observe it ; nor is its occurrence recorded by Vernon Harcourt in Madeira.

38. †*MOTACILLA SULPHUREA* (Bechst.).

M. boarula, Bolle, J. für Orn. 1857, p. 286 ; Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

M. flava? W. & B. Orn. Can. p. 16 ; Bolle, J. für Orn. 1854, p. 455.

This beautiful species is exceedingly common in all three of the Atlantic archipelagoes ; wherever there is a pool or stream of water, a pair of them are sure to be seen, actively engaged in catching the insects which abound in such localities. Webb and Berthelot, and also Bolle, in his first paper on the birds of the Canaries, have mistaken it for *M. flava*, though the latter has corrected this error in his second paper, as quoted above.

39. †*ANTHUS BERTHELOTI*, Bolle.

Ibis, 1862, p. 343 ; J. f. Orn. 1862, p. 357.

A. trivialis, Linn. ; W. & B. Orn. Can. p. 16 ; Bolle, J. für Orn. 1854, p. 455.

A. pratensis, Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, 1855, xv. p. 437.

A. campestris, Bolle, J. für Orn. 1857, p. 288.

The distinction between this species and its continental allies, with which it had previously been confounded, was pointed out by Dr. Bolle in 'The Ibis' for 1862, p. 343, where he describes

it under the above specific name. I procured several examples of it in Teneriffe, where it is exceedingly common. I also saw it in the islands of Palma and Gran Canary, though I failed to procure specimens from either. On the Desertas it is exceedingly common, and I shot several specimens on the smallest island; but unfortunately they were all washed overboard in returning, together with the rest of the things I collected there. *A. bertheloti* takes short flights, like *A. pratensis*. It is usually very tame, and runs along the ground, not caring to take flight, whence it has received the name "Caminero" in the Canaries, and "Corre-de-Caminho" in Madeira.

[To be continued.]

XXI.—*Observations on the Systematic Position of the Genera Peltops, Eurylæmus, and Todus.* By P. L. SCLATER, M.A., Ph.D., F.R.S.

THE genus *Peltops*, containing the single species *P. blainvillii* of New Guinea, has been usually referred to the Eurylæminæ, or Broad-bills, and the group thus formed united in the same family with the Rollers (Coraciadæ), the Todies (Todidæ), and the Motmots (Momotidæ), or at all events placed in their immediate neighbourhood*. Several errors are, in my opinion, embraced in this classification.

In the first place, *Peltops* has nothing whatever to do with the Eurylæmidæ, being a truly Muscicapine form allied to *Monarcha* and *Machæirhynchus*, as the most casual examination of its structure at once shows. The mistake, no doubt, comes from the somewhat exaggerated form of the bill in *Peltops*, and from its general coloration resembling that of *Cymbirhynchus*. The rarity of *Peltops* has prevented the error from being discovered. On examining the wing of *Peltops* it will be seen that the first primary is short or "spurious," as in all the true Oscines, when it exists at all. In *Cymbirhynchus* there are ten fully formed primaries. There is also a conspicuous difference in the size of the feet in the two forms, these organs being strong and thick

* In Mr. G. R. Gray's 'Hand-list of Birds' (i. p. 319) *Peltops* is correctly placed in the Muscicapidæ.